

3 1/2 animal feed or water; and

G. Supplying the resulting antibody-containing contents and animal feed or water to food animals to substantially prevent adherence of the immunogen in the intestinal tracts of the animals thereby promoting the growth of the animals.

REMARKS

Reconsideration of this application, as amended, is requested.

The specification has been reviewed and amended to correct the informal matters noted by the examiner. The examiner's review of the specification is appreciated.

Duplicate page 22 of the specification has been deleted. Pages 23 to 32 have been renumbered as pages 22 to 31.

Copies of pages 15, 18, 22 and 23 to 31 showing the amendments marked in red ink are enclosed along with clean amended copies of these pages.

The target immunogen with which the bird is inoculated is a protein-wasting organism that inhibits animal growth. The control of growth of this organism in the animal boosts feed efficiency and promotes growth of the animal. *Spec., p. 7, lines 3-17*. The protein-wasting immunogen is from a class consisting of *P. anaerobius*, *C. sticklandii* and *C. aminophilum*. These immunogens are described in Examples 7, 8 and 9 on pages 17 and 18 of the specification. Examples 17, 18 and 19 relate to these immunogens. *Pages 23 and 24*.

Claim 10 defines a method of promoting the growth of food animals by decreasing the waste of dietary protein. The increase in dietary protein in vivo results in feed efficiency that results in increases in growth of the animals. The in vivo protein-wasting immunogens are inhibited from adhering to the rumen or intestinal tracts of the animals thereby reducing their ability to multiply. The protein-wasting immunogen is a targeted protein-wasting immunogen

that inhibits animal growth. This defines the metes and bounds of the targeted immunogen. The antibody to the immunogen is produced in female birds and resides in eggs laid by these birds. Egg antibody material is distributed in animal feed or water and supplied to the animals. The result is that the antibody material substantially prevents adherence of the immunogen to the intestinal tracts of the animals and prevents the ability of the immunogen to multiply in vivo. Claim 10 particularly points out and distinctly claims applicants' method of promoting the growth of food animals. The targeted protein-wasting immunogen is limited to immunogens that inhibit animal growth. This language is not indefinite and sets out the parameter of the claimed method. Reconsideration of the rejection of claim 10 under 35 USC 112 is requested.

Claim 11 depends on claim 10. This claim further defines the class of the protein-wasting immunogen as consisting of *P.anaerobius*, *C.sticklandii* and *C.aminophilium*. This claim particularly points out the class of the immunogen which further sets out the metes and bounds of the method of promoting the growth of food animals defined in claim 10. Reconsideration of the rejection of claim 11 under 35 USC 112 is requested.

Claim 14 defines applicants' method of promoting animal growth caused by a protein-wasting immunogen. The immunogen is P antigen from *P.anaerobius*. *Example 17, page 23, lines 15-20.*

Claim 15 defines applicants' method of promoting animal growth caused by another protein-wasting immunogen. This immunogen is CS antigen from *C.sticklandii*. *Example 18, pages 23 and 24, lines 22-23 and 1-4.*

Claim 16 defines applicants' method of promoting animal growth caused by another protein-wasting immunogen. This immunogen is CA antigen from *C.aminophilium*. *Example 19, page 24, lines 5-11.*

Krause et al discloses that in vivo studies indicate that monensin decreased ammonia

production and that this decrease was correlated with probes of *P.anaerobius* and *C.sticklandii*. There was an inability to monensin to inhibit *C.aminophilium*. *Page 819, Col. 1, lines 7-12; Col. 2, lines 19-25. Krause et al* states that ruminal amino acid degradation is a nutritionally wasteful process in animals that produces excess ruminal ammonia. Excess ammonia is absorbed by the animal and converted to urinary urea. Ruminant nitrogen excretion is a major source of environmental pollution. There is no information in *Krause et al* of a method of promoting the growth of food animals by decreasing the waste of dietary protein caused by the presence of a protein-wasting immunogen by inhibiting the ability of the immunogen to adhere to the rumen or intestinal tracts of food animals and reduce the ability of the immunogen to multiply. The examiner is correct in stating that *Krause et al* differs from the claimed invention by not adding bird antibody directed against *P.anaerobius*, *C.sticklandii* and *C.aminophilium* as a food additive to improve the growth of livestock.

Tokoro et al discloses a specific antibody containing substance obtained from eggs from hens which have been immunized against a selected antigen. The antibody containing substance is administered to animals affected by intestinal infectious disease, such as diarrhea in pigs and calves, for therapeutical purposes. *Col. 5, lines 1-13. E.coli* is known to cause diarrhea in pigs. There is no disclosure in *Tokoro et al* of any method of promoting growth of food animals by decreasing the waste of dietary protein caused by the presence of protein-wasting immunogens in the rumen or intestinal tracts of food animals by inhibiting the ability of the immunogens from adhering to the rumen or intestinal tracts of food animals to reduce the ability of the immunogens to multiply. Also, there is no suggestion producing P, CS and CA antigens and distributing antibody-containing contents to these antigens to animal feed or water and supplying this animal feed or water to feed animals to promote growth of these animals.

Applicants have discovered a new method of promoting animal growth which has results

that are not within the skills or expectations of persons skilled in the art. There is no suggestion in the prior art of record of applicant's claimed method of promoting animal growth which renders the claimed method obvious to a person skilled in the art. It is submitted that applicants' methods of promoting animal growth are patentable over the prior art publication to *Krause et al* and *Tokoro et al* patent.

Enclosed for review by the examiner are copies of an article "Antimicrobe Marinade," *Scientific American*, May 2001, p. 30 and U.S. Patent Nos. 5,965,128 and 6,083,500 noted in the article.

In view of the above remarks, applicants request allowance of claims 10, 11, 14, 15 and 16.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on June 8, 2001.

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Signature

June 8, 2001
Date of Signature